Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed using Kaizen SAP 10.2 SAP 10 program, 1.0.1

Date: Fri 28 Feb 2025 14:07:18

Project Information			
Assessed By	Connor Campbell	Building Type	House, Detached
OCDEA Registration	KAZN000009	Assessment Date	2025-02-25

Dwelling Details			
Assessment Type	As designed	Total Floor Area	113 m^2
Site Reference	58	Plot Reference	307SM MIR DET BR 6.3
Address	Address Line 1, ..., XX1X 1XX		

Client Details	
Name	Bloor Homes Western
Company	Bloor Homes Western
Address	Rudgeway House, Celandine Road, Tewkesbury, GLOUCESTERSHIRE, GL20 7FU

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Mains gas	
Target carbon dioxide emission rate	*12.10 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.67 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*63.40 kWh_{PE}/m^2*	
Dwelling primary energy	62.79 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.20 kWh/m^2*	
Dwelling fabric energy efficiency	42.79 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Wl - Dormer (0.26)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.12	Flr - Ground (0.12)	OK
Roofs	*0.16*	0.14	Rf - Ins Rafter (0.16)	OK
Windows, doors, and roof windows	*1.6*	1.24	Front (1.5)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Brick	125.949	0.24
Exposed wall: Spandrel Wall, Roof	17.55	0.25
Exposed wall: Wl - Dormer	3.092	0.26
Exposed wall: Wl - Stud Ashlar	21.151	0.1152 **(!)**
Ground floor: Flr - Ground	41.91	0.12
Exposed roof: Rf - Ins Joist	11.617	0.09 **(!)**
Exposed roof: Rf - Ins Rafter	32.31	0.16
Exposed roof: Bay Roof, Family/Dinning	2.051	0.1 **(!)**
Exposed roof: Flat Roof, Dormer	2.318	0.16
Exposed roof: Bay Window, Flat Roof	1.73	0.16
Exposed roof: Rf - Ashlar behind Stud	5.935	0.1152

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Front, Door (1)	2.148	South West	0.7	1.2
Front, Windows (1)	7.886	South West	1.0	1.3
L Side, Windows (2)	6.504	North West	1.0	1.3
R Side, Windows (3)	1.652	South East	1.0	1.3
Rear, Windows (4)	2.437	North East	1.0	1.3
L Side, Windows (5)	1.362	North West	1.0	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
R Side, Windows (6)	1.362	South East		0 **(!)**
Front, Windows (7)	2.88	South West	1.0	1.3
R Side, Windows (8)	3.15	South East	1.0	1.3
Front, RoofLights (1)	0.539	South West	1.0	1.5

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part **1 - Main Dwelling**: Thermal bridging calculated from linear thermal transmittances for each junction

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.044	Not Provided
External wall	E4: Jamb	Calculated by person with suitable expertise	0.01 **(!)**	Not Provided
External wall	E3: Sill	Calculated by person with suitable expertise	0.009 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.047	Not Provided
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.003 **(!)**	Not Provided
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	-0.027 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.044	Not Provided
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.046	Not Provided
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.129	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.107	Not Provided
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.05	Not Provided
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.049	Not Provided
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.052	Not Provided
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	-0.001 **(!)**	Not Provided
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.021 **(!)**	Not Provided
Roof	R10: All other roof or room-in-roof junctions	Calculated by person with suitable expertise	0.029 **(!)**	Not Provided

3 Air permeability (better than typically expected values are flagged with a subsequent (!))

Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Boiler with radiators or underfloor heating - Mains gas

Efficiency	90.75%
Emitter type	Radiators
Flow temperature	55°C
System type	Gas1998OrLater
Manufacturer	Ideal
Model	LOGIC COMBI
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	69.4%	
Manufacturer	Q-Blue B.V.	
Model	QB1-21	

6 Controls		
Main heating 1 - type: Programmer, room thermostat, and TRVs		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 lm/W	OK
External lights control	N/A	

8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	*0.7 W/(l/s)*	
Specific fan power	0.01 W/(l/s)	OK
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model	0	
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	30°
Overshading	None or very little
Manufacturer	Not Provided
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name: Connor Campbell	Assessor ID: KAZN000009 Date: 28 Feb 2025

b. Client Declaration
N/A